ABSTRACT OF THE DISCLOSURE

The present invention discloses a PFC-PWM controller having interleaved switching. A PFC stage is used to generate a PFC signal for switching the PFC boost converter switches. A PWM stage is used to generate a PWM signal for switching the DC-to-DC power converter switches. The PFC-PWM controller includes a power manager for generating a discharge current and a burst-signal. Under light-load conditions, the discharge current is decreased in proportion to the load. The burst signal is utilized to disable the PFC signal in a suspended condition for power saving. The PFC-PWM controller also includes an oscillator for producing a pulse-signal, a ramp-signal, and a slope-signal. These three signals are used to correctly generate the PFC signal and the PWM signal. The pulse width of the pulse-signal ensures a dead time after the PFC signal is turned off and before the PWM signal is turned on. This dead time spreads the switching signal and reduces the switching noise. When the discharge current decreases, the pulse width of the pulse-signal will increase and the frequency of the pulse-signal will decrease correspondingly. This further reduces power consumption under light-load and zero-load conditions.